**HW answers:**

26) (a) μX—20  = 60 σX—2 0 = 12

(b) μ0.5Y = 6 σ0.5Y= 1.5

(c) μ X+Y = 92 σX+Y = 12.37

(d) μ X—Y  = 68 σX—Y  = 12.37

(e) μ Y1+Y2 = 24 σY1+Y2 = 4.2

27) (a) μ 0.8Y = 240 σ0.8Y = 12.80

(b) μ 2X—100  = 140 σ2X—100  = 24

(c) μ X+2Y = 720 σX+2Y = 34.18

(d) μ 3X—Y  = 60 σ3X—Y  = 39.40

(e) μ Y1+Y2 = 600 σY1+Y2 = 22.63

15) (a) E(X) = 1.7 (b) SD(X) = 0.90 \*\*per hour\*\*

31) μX+X+X+X+X+X+X+X = 13.6 σX+X+X+X+X+X+X+X = 2.546

35)

(a) There is a large variation (spread) in the amount of claims. Most claims are small (minor house damage), however there are also very large claims (major house damage).

(b) μX+X = 150 + 150 = ***$300***

σX+X = (60002) + (60002) = ***$8485.28***

(c) μX+X + ..... X + X = 10,000\*(150) = ***$1,500,000***

σX+X + .....X + X = (60002) + (60002) + ...... = 10,000(60002) = = ***$600,000***

(d) Yes, the company is likely to be profitable. If the company writes 10,000 policies, then we can expect 95% of the profits to be within μ + 2σ = ($300,000 **,** $2,700,000). This is profitable.

(e) We assumed that each policy must be independent